| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/666,281 | 09/21/2000 | Jin Soo Lee | III-019 | 8469 |

34610      7590      01/14/2004

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| EXAMINER |
|---|
| MAHMOUDI, HASSAN |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2175 | /2 |

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 09/666,281 | LEE ET AL. |
| | **Examiner** | **Art Unit** |
| | Tony Mahmoudi | 2175 |

*-- Th MAILING DATE of this communication appears on the cover sheet with the correspondenc address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _09 December 2003_.

2a)☐ This action is **FINAL**.     2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _1-5 and 7-20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _7-10_ is/are allowed.

6)☒ Claim(s) _1-4 and 14-20_ is/are rejected.

7)☒ Claim(s) _5 and 11-13_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All  b)☐ Some * c)☐ None of:
      1.☒ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
   since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
   37 CFR 1.78.
    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
   reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

DOV POPOVICI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's Request for Continued Examination (RCE) submission filed on 09-December-2003 has been entered. In addition, the "After Final" amendment filed on 08-October-2003 has been entered as a *preliminary amendment* for this continued examination.

### *Remarks*

2. In response to communications filed on 08-October-2003, claim 6 is cancelled and claims 1, 5, 7-15, 17, and 19 have been amended per applicant's request. Therefore, claims 1-5 and 7-20 are pending in the application.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.  Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al (U.S. patent No. 6,347,313) in view of Liddy et al (U.S. patent No. 6,304,864), and further in view of Herz (U.S. Patent No. 4,460,036.)

As to claim 1, Ma et al teaches a multimedia data structure used for an image search, comprising:

(a) information describing at least one feature of a certain image (see column 3, lines 18-23); and

(b) recent user feedback information (see column 3, lines 37-56) based on user relevance feedback (see column 6, lines 45-50.)

Ma et al does not teach:

(c) whole feedback information based on the user relevance feedback.

Liddy et al teaches a system for retrieving multimedia information (see Abstract), in which she teaches whole feedback information based on the user relevance feedback (see column 12, lines 9-24, and see column 13, lines 26-38, where "whole feedback" is read on "relevance feedback" on a "periodic time interval".)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Ma et al to include whole feedback information based on the user relevance feedback.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Ma et al by the teaching of Liddy et al, because having whole feedback information based on the user relevance feedback, would enable the system to define periodic intervals automatically, or as set by the user, to allow accumulation of all relevance feedback on a particular object (image) to be captured, in order to categorize the objects (image) based on whole user relevance feedback.

Ma et al as modified, still does not teach feedback obtained since formation of the data structure.

Herz teaches a method and system for customized electronic identification of desirable objects (see Abstract), in which he teaches feedback obtained since formation of the data structure (see column 17, lines 30-40, and see column 19, line 45 through column 20, line 10, where "since formation of the data structure" is read on feedback on profile Y during years 1990 through 1995, as of creation date of profile Y being 1990.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Ma et al as modified, to include feedback obtained since formation of the data structure.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Ma et al as modified, by the teaching of Herz, because including feedback obtained since formation of the data structure, would be able to provide an accumulated/historical user feedback on images and electronic objects of interest to users, since the creation of such objects, as opposed to only feedback just recently received from users.

As to claim 2, <u>Ma et al</u> as modified teaches wherein the recent user feedback information is determined for a predetermined time period (see <u>Liddy et al</u>, column 12, lines 13-14, where "predetermined time period" is read on "interval may be 15 minutes") or by a predetermined frequency (see <u>Liddy et al</u>, column 12, lines 21-22, where "predetermined frequency" is read on "X number of documents".)

As to claim 3, <u>Ma et al</u> as modified teaches wherein the recent user feedback information is a weight value learned by the user relevance feedback or a similar image information (see <u>Ma et al</u>, column 6, lines 49-50, and see column 8, lines 4-10), and the whole feedback information is represented by a weight value learned by previous feedback (see <u>Liddy et al</u>, column 13, lines 30-33.)

5. Claims 4 and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over <u>Ma et al</u> (U.S. patent No. 6,347,313) in view of <u>Liddy et al</u> (U.S. patent No. 6,304,864) and further in view of <u>Herz</u> (U.S. Patent No. 4,460,036), as applied to claims 1-3 above, and still further in view of <u>Cohen</u> (U.S. Patent No. 6,067,539.)

As to claim 4, <u>Ma et al</u> as modified does not teach the data structure further comprising recent user feedback reliability information representing how reliable the recent user feedback information is, and whole feedback reliability information representing how reliable the whole feedback information is.

<u>Cohen</u> teaches an intelligent information retrieval system (see Abstract), in which he teaches: recent user feedback reliability information representing how reliable the recent

user feedback information is (see column 7, lines 51-56), and whole feedback reliability information representing how reliable the whole feedback information is (see column 2, lines 45-64, where "whole feedback" is read on "updating the score with scores received on previous message".)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Ma et al as modified to include recent user feedback reliability information representing how reliable the recent user feedback information is, and whole feedback reliability information representing how reliable the whole feedback information is.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Ma et al as modified, by the teaching of Cohen, because recent user feedback reliability information representing how reliable the recent user feedback information is, and whole feedback reliability information representing how reliable the whole feedback information is, would increase the efficiency and accuracy of the entered feedback and allow data (images) with the most relevant/reliable user feedback to receive a higher rank/weight for presentation to the user than data (images) with a lower reliability score.

As to claim 14, Ma et al teaches a method of determining weights of image features used for an image search based on user relevance feedback (see Abstract), comprising:

(a) providing a multimedia data structure (see column 1, lines 5-10) including information describing the features of a certain image (see column 3, lines 18-23), and recent user feedback information for the image (see column 3, lines 37-56, and see column 6, lines 45-50);

(b) updating the recent user feedback information (see column 2, lines 28-33);

(c) determining weights of the image features in proportion to the reliabilities of the recent feedback information (see column 6, lines 11-18.)

Ma et al does not teach: whole feedback information for the image; and determining weights of whole feedback information, or both the recent feedback information and the whole feedback information.

Liddy et al teaches a system for retrieving multimedia information (see Abstract), in which she teaches: whole feedback information for the image (see column 12, lines 9-24, and see column 13, lines 26-38, where "whole feedback" is read on "relevance feedback" on a "periodic time interval"); and determining weights of whole feedback information, or both the recent feedback information and the whole feedback information (see column 13, lines 15-18.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Ma et al to include whole feedback information for the image; and determining weights of whole feedback information, or both the recent feedback information and the whole feedback information.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Ma et al by the teachings of Liddy et al, because obtaining whole feedback information for the image; and determining weights of whole feedback information, or both the recent feedback information and the whole feedback information, would

enable the system to define periodic intervals automatically, or as set by the user, to allow

accumulation of all relevance feedback on a particular object (image) to be captured, in order to

categorize the objects (image) based on whole user relevance feedback and based on the weights

(ranking) of relevance of the entered feedback.

Ma et al as modified, still does not teach feedback based on relevance feedback obtained

since formation of the data structure.

Herz teaches a method and system for customized electronic identification of desirable

objects (see Abstract), in which he teaches feedback obtained since formation of the data

structure (applicant is kindly directed to remarks and discussions made in claim 1 above.)

Ma et al as modified still does not teach reliability information corresponding to the recent

user feedback information and whole feedback information; and updating whole feedback

information and their reliabilities by learning them in response to the user relevance feedback.

Cohen teaches an intelligent information retrieval system (see Abstract), in which he teaches

reliability information corresponding to the recent user feedback information (see column 7,

lines 51-56), and whole feedback information (see column 2, lines 45-64, where "whole

feedback" is read on "updating the score with scores received on previous message"); and

updating whole feedback information and their reliabilities by learning them in response to the

user relevance feedback (see column 7, lines 36-38.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time

the invention was made to have modified Ma et al as modified to include reliability information

corresponding to the recent user feedback information and whole feedback information; and

updating whole feedback information and their reliabilities by learning them in response to the

user relevance feedback.

It would have been obvious to a person having ordinary skill in the art at the time the

invention was made to have modified Ma et al as modified, by the teaching of Cohen, because

reliability information corresponding to the recent user feedback information and whole

feedback information; and updating whole feedback information and their reliabilities by

learning them in response to the user relevance feedback, would increase the efficiency and

accuracy of the entered feedback and allow data (images) with the most relevant/reliable user

feedback to receive a higher rank/weight for presentation to the user than data (images) with a

lower reliability score.


As to claim 15, Ma et al as modified teaches wherein the recent user feedback information is

represented by a weight value learned by the user relevance feedback or a similar image

information (see Ma et al, column 6, lines 49-50, and see column 8, lines 4-10), and the whole

feedback information is represented by a weight value learned by feedback (see Liddy et al,

column 13, lines 30-33) given since formation of the data structure (see Herz, column 17, lines

30-40, and see column 19, line 45 through column 20, line 10, where "since formation of the

data structure" is read on feedback on profile Y during years 1990 through 1995, as of creation

date of profile Y being 1990.)


As to claim 16, Ma et al as modified teaches wherein the reliability of the recent user

feedback information (see Cohen, column 7, lines 51-56) is determined in proportion to a

consistency of a recently used pattern or feedback (see <u>Liddy et al</u>, column 3, line 64 trough

column 4, line 9.)


As to claim 17, <u>Ma et al</u> as modified teaches wherein the reliability of the whole feedback

information is determined in proportion to a number of feedback responses concerned in learning

(see <u>Cohen</u>, column 9, lines 32-51.)


As to claim 18, <u>Ma et al</u> as modified teaches wherein the reliability of the whole feedback

information is responsive to recorded usage records wherein the recorded user usage records

provide feedback to the reliability of the whole feedback information without user interaction

(see <u>Cohen</u>, column 4, lines 31-39.)


As to claim 19, the applicant is directed to the remarks and discussions made in claims 1 and

14 above.


As to claim 20, <u>Ma et al</u> as modified teaches wherein the reliability information indicates

reliability of both the user feedback information (see <u>Cohen</u>, column 7, lines 51-56) and the

whole feedback information (see <u>Cohen</u>, column 2, lines 45-64, where "whole feedback" is read

on "updating the score with scores received on previous message.)

*Allowable Subject Matter*

6.  Claims 7-10 are allowed over the prior art made of record.

7.  The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record, <u>Ma et al</u> (U.S. Patent No. 6,347,313), <u>Liddy et al</u> (U.S. Patent No. 6,304,864), <u>Herz</u> (U.S. Patent No. 6,460,036), and <u>Cohen</u> (U.S. Patent No. 6,067,539) do not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claims):

(b) if it is checked that the similar image does not exist in the current queue, inputting the similar image to an uppermost space of a queue entrance, setting a number of feedback responses of the similar image to "1", and shifting images existing in the queue to lower positions by one space;

(c) if it is checked that the similar image exists in the current queue, increasing the number of feedback responses of the similar image, and shifting other images in the queue to upper positions by "N"; and

(d) if any image is shifted to a lower position over a size of the queue at the respective steps, deleting the image shifted to the lower position from the queue, as claimed in claim 7.

Claims 8-10 are allowed over the prior art made of record because they are dependents from the allowed independent claim 7.

8.  Claims 5 and 11-13 are objected to as being dependent upon a rejected base claim, but would

    be allowable if rewritten in independent form including all of the limitations of the base

    claim and any intervening claims.

9.  The following is a statement of reasons for the indication of allowable subject matter:

    The prior art of record, Ma et al (U.S. Patent No. 6,347,313), Liddy et al (U.S. Patent No.

    6,304,864), Herz (U.S. Patent No. 6,460,036), and Cohen (U.S. Patent No. 6,067,539) do not

    disclose, teach, or suggest the claimed limitations of (in combination with all other features in

    the claims):

    wherein the recent user feedback reliability information is expressed by

$$1 - \frac{\left[ \sum_{i=0}^{i=m} (N - n_i) \right]}{N}$$

    where, N is a number of user feedback responses, m is a number of images in a similar image

    list, and $n_i$ is a number of user feedback responses given to the i-th image, as claimed in claim 5.

    The prior art of record, Ma et al (U.S. Patent No. 6,347,313), Liddy et al (U.S. Patent No.

    6,304,864), Herz (U.S. Patent No. 6,460,036), and Cohen (U.S. Patent No. 6,067,539) do not

    disclose, teach, or suggest the claimed limitations of (in combination with all other features in

    the claims):

wherein the recent user feedback information is represented as a similar image list, and the

similar image list has an image list structure which includes a similar image identification, a

score reflecting the current feedback, and a waiting duration representing a time period between

a final feedback time point and a present time point, as claimed in claim 11.


Claims 12-13 are objected to as being dependent upon the objected to dependent claim 11.


## *Response to Arguments*

10. Applicant's arguments filed on 08-October-2003 with respect to the rejected claims in view

of the cited references have been fully considered but they are moot in view of the new
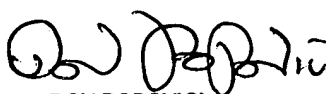
grounds of rejection.


## *Conclusion*

11. Any inquiries concerning this communication or earlier communications from the examiner

should be directed to Tony Mahmoudi whose telephone number is (703) 305-4887. The

examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Dov Popovici, can be reached at (703) 305-3830.


tm

January 6, 2004

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